

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1 and 3-8 are pending. Claim 2 was previously cancelled. Claim 1 is amended. Claim 1 is independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Reasons for Entry of Amendments

At the outset, it is respectfully requested that this Amendment be entered into the Official File in view of the fact that the amendments to the claims automatically place the application in condition for allowance.

In the alternative, if the Examiner does not agree that this application is in condition for allowance, it is respectfully requested that this Amendment be entered for the purpose of appeal. This Amendment was not presented at an earlier date in view of the fact that Applicants did not fully appreciate the Examiner's position until the Final Office Action was reviewed.

Rejections Under 35 U.S.C. § 103(a)

Claim 1, 3, 4, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosravi (U.S. Patent 6,361,546) in view of Brooks et al. (U.S. Patent 6,346,116); and

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosravi in view of Brooks et al., and further in view of Rosenbluth (WO 99/56801).

These rejections are respectfully traversed.

Amendments to Independent Claim 1

While not conceding the appropriateness of the Examiner's rejection, but merely to advance the prosecution of the present application, independent claim 1 has been amended herein to recite a combination of elements directed to a thrombus capture catheter, including *inter alia*

“said thrombus capture member comprising a crossed wire member and a filter attached thereto, said crossed wire member comprising a plurality of spirally-configured wires, said wires being arranged around a shaft by surrounding the shaft spirally and by allowing the wires to cross each other, thereby forming an original configuration swollen in middle portion and tapered to the proximal and distal ends thereof under a normal condition and allowing the wires to move freely without being restricted by each other in their movements”.

As can be seen from revised claim 1, the present invention includes a plurality of spirally-configured wires, which constitute a crossed wire member having an original configuration swollen in middle portion and tapered to the proximal and distal ends thereof under a normal condition, are arranged around the shaft by surrounding it spirally so as to cross each other.

Specifically, the crossed wire member based on the present invention would be defined on the basis of illustration of FIG. 3 such that the crossed wire member comprises a plurality of spirally-configured wires including right-handed spiral wires and left-handed

spiral wires, either right-handed spiral wires or left-handed spiral wires being arranged around the shaft by surrounding it spirally, while other spiral wires are arranged around said shaft and said either right-handed or left-handed spiral wires by surrounding them spirally so as to cross over on said either right-handed or left-handed spiral wires.

Accordingly, the present invention allows the spirally-configured wires to move freely without being restricted by each other in their movements at the time of expanding and shrinking of the thrombus capture member. The function of the above construction is promoted by another feature, i.e., the fact that the crossed wire member is fixed at the proximal end thereof to a shaft (guide wire), but is slidably mounted at the distal and thereof on the shaft. This facilitates elongation and contraction of the spirally-configured wires, i.e., expanding and shrinking of the thrombus capture member.

According to the present invention, the thrombus capture catheter enables reliably capturing of the thrombus as well as performing percutaneous transluminal angioplasty with ease without preventing the blood flow to peripheral blood vessels through a diseased site of the vessel. Because the spirally-configured wires are arranged around the shaft by surrounding it spirally, the shaft passes through the center of the thrombus capture member, thus making it possible to hold the thrombus capture member in uniform contact with the wall of the blood vessel. Further, since the spirally-configured wires are arranged around the shaft by surrounding it spirally so as to cross each other, the spirally-configured wires move freely without being restricted by each other in their movements at the time of expanding and

shrinking of the thrombus capture member. This makes it possible to perform percutaneous transluminal angioplasty with ease.

In contrast thereto, Khosravi merely discloses a vascular filter (10) or a thrombus capture member (14, 16) to be used in combination with a delivery device (50) including an elongate tubular sheath (52) and an elongate bumper member (54) slidably disposed within the sheath (52).

The vascular filter (10) comprises an elongate tubular member (12), an expandable frame (14), and filter material (16) attached to the expandable frame (14) and/or the tubular member (12). The expandable frame (14) comprises a plurality of wire elements (24) and is attached at the distal ends 28 to the outer surface 18 of the tubular member, and at the proximal ends 26 to an annular collar 30 slidable on the tubular member 12.

However, the thrombus capture member (14, 16) is adapted to assume a collapsed condition (FIG. 2A) and an enlarged condition (FIG. 1), which differs from the deformation of the thrombus capture member of the present invention. This is because the crossed wire member of the present invention does not take a collapsed condition, but instead takes an elongated condition and a contracted condition.

Further, it is to be noted that the bumper member 54 of Khosravi is a independent member separated from the thrombus capture member (14, 16) and is combined only when pushing the thrombus capture member (14, 16) through the outlet 66 and into the vessel 100 (columns 5, line 48 – column 6, line 10). After locating the thrombus capture member (14,

16) in the blood vessel, the bumper member 54 is removed from the blood vessel (see FIG. 2C and 2D). Thus, the combination of the shaft 12 and member 54 differs in both construction and function from the flexible shaft of the present invention.

In addition, Khosravi teaches nothing about the construction of the crossed wire member as being spirally-configured and crossed with respect to each other.

Brooks et al. disclose a filter assembly basket 58 comprising struts 56 for supporting a filter membrane and teaches that struts 56 have a dense braid on distal portion 60 that transitions to a less dense braid on proximal portion 62 (column 4, lines 36-52). From FIG. 4, it appears that struts are spiral and crossed with one another. However, the filter assembly basket 58 is fixed to the guide wire 64 at its proximal end 66 and distal end 68, and thus the filter basket 58 is collapsed around the guide wire 65 and housed within sheath 70 as well as the filter assembly 12 shown in FIG. 2. This clearly teaches that the filter assembly of Brooks et al. differs in function and construction of the present invention.

At least for the reasons explained above, Applicants respectfully submit that the combination of elements as set forth in independent claim 1 is not disclosed or made obvious by the prior art of record, including Khosravi and Brooks et al.

Therefore, independent claim 1 is in condition for allowance.

Dependent Claims

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

Application No. 10/642,591
Amendment dated June 13, 2008
Reply to Office Action of March 13, 2008

Docket No.: 0020-5166P
Art Unit: 3731
Page 10 of 11

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are respectfully requested.

JMS/CTT/ktp

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

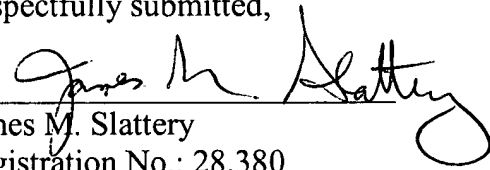
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030 (direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

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Respectfully submitted,

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